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ABSTRACT

The average scores of high school students on the Scholastic Aptitude Test (SAT) have been dropping for the past twelve years. From 1974 to 1975, average scores dropped ten points on the verbal section and eight points on the mathematics section. These dramatic declines, the largest ever reported by the College Entrance Examination Board, have become the focus of considerable national attention and concern. Explanation of declining SAT scores generally fall into two broad categories: (1) those that focus on the student taking the test--their society, their family training, and their schooling; and (2) those that focus on the tests themselves--how they are constructed, evaluated, and interpreted. Since these two explanatory approaches to the score decline are seldom examined together, the conclusions they yield often result in confusing and contradictory policy proposals aimed at reversing the trend. This paper is a critical examination and assessment of each explanatory category and its implication for educational policy. (RC)

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OSSC BULLETIN

WHY SCHOLASTIC APTITUDE TEST SCORES ARE FALLING

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

by
C. H. Edson

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FOREWORD

Few topics have shaken the education profession as dramatically as the debate over falling SAT scores. Educators and the public want assurance that schools are providing the best education possible for the nation's children: Declining SAT scores raise questions about the quality of that education.

"Why SAT Scores Are Falling" by C. H. Edson examines several key issues in the debate and clarifies some basic misunderstandings not only about the SAT but about mental testing in general. Of particular interest is the discussion of the SAT's history and norms.

Although its discussion of the SAT controversy will interest all educators and board members, this Bulletin should be of special interest to secondary school administrators and counselors and to higher education personnel who are directly concerned with SAT scores. All concerned with the controversy will find Edson's discussion of the questions at issue thorough and provocative.

C. H. Edson, Visiting Assistant Professor of Educational Policy, has been teaching the history of education at the University of Oregon since 1973.

Kenneth A. Erickson
Executive Secretary
Oregon School Study Council

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INTRODUCTION

The average scores of high school students on the Scholastic Aptitude Test (SAT) have been dropping for the past twelve years. From 1974 to 1975, average scores dropped ten points on the verbal section and eight points on the mathematics section. These dramatic declines, the largest ever reported by the College Entrance Examination Board, have become the focus of considerable national attention and concern. Although educators, College Board officials, and editorial writers have attempted to explain the decline, my conviction is that such speculations, rather than contributing to our understanding of the phenomenon, have often added to our confusion. In hopes of clarifying some basic misunderstandings about the SAT in general and of declining scores in particular, we first turn to an examination of the data that have launched the debate.

THE DECLINE OF SAT SCORES

The Scholastic Aptitude Test, the most widely used college entrance examination, is scored on a range of 200 to 800 points. The College Entrance Examination Board has compiled comparable data on the average scores attained by high school seniors going back to 1956. During that

The author remains responsible for the manuscript; nevertheless, he gratefully acknowledges the assistance of C. A. Bowers, Kenneth Erickson, Robert Everhart, Gail Fullington, Michael Katz, and Don Robinson. To Paul Chapman and Harry Wolcott he notes a special debt of gratitude.

period the average score reached a high in 1963 and, with few exceptions, has declined steadily ever since. Between 1966 and 1975, the average score on the verbal test dropped thirty-two points; on the mathematics test, twenty points. The most precipitous decline on these tests, of ten and eight points respectively, occurred between 1974 and 1975 (Table 1).

TABLE 1

SAT SCORE AVERAGES, 1966-1975

Year	Verbal	Mathematical
1966-67	466	492
1967-68	466	492
1968-69	463	493
1969-70	460	488
1970-71	455	488
1971-72	453	484
1972-73	445	481
1973-74	444	480
1974-75	434	472

Source: Malcolm Scully, "Drop in Aptitude-Test Scores," p. 19.

Paradoxically, the most recent decline in SAT scores was accompanied by steadily improving high school grade records. In 1975, high school seniors reported higher average grades than their 1974 counterparts; similarly, 1974 seniors reported higher grades than 1973 seniors.

The dramatic decline in the average SAT score over the past few years is at once a consequence of a larger number of lower scores and a fewer number of higher ones. Comparative data on score distribution between 1974 and 1975 indicate (Table 2):

TABLE 2

CHANGES IN SAT SCORES, 1973/74 - 1974/75

	VERBAL (Numbers of Students)			MATHEMATICAL (Numbers of Students)		
Score Range	1973-74	1974-75	(+)or(-)	1973-74	1974-75	(+)or(-)
750-800	2,305	1,937	-368	9,871	9,381	-490
700-749	12,372	9,443	-2,929	26,371	23,624	-2,747
650-699	28,716	22,077	-6,639	54,029	43,040	-10,989
600-649	55,373	45,676	-9,697	79,573	79,471	-102
550-599	86,364	77,560	-8,804	120,281	107,433	-12,848
500-549	126,116	125,273	-843	141,930	149,850	+7,920
450-499	160,509	159,618	-891	158,167	157,362	-805
400-449	165,007	178,397	+13,390	144,058	142,166	-1,892
350-399	155,471	158,436	+2,965	117,864	137,475	+19,611
300-349	111,785	119,875	+8,090	91,588	93,437	+1,849
250-299	60,095	65,105	+5,010	36,764	45,392	+8,628
200-249	21,126	33,031	+11,905	4,619	7,760	+3,141
Total students	985,239	996,428		985,115	996,391	
Average scores	444	434		480	472	

Source: Malcolm Scully, "Drop in Aptitude-Test Scores," p. 19.

*The number of students scoring below 400 on the verbal test rose from 348,477 in 1974 to 376,447 in 1975, an increase of 8 percent.

*The number of students scoring below 400 on the mathematical test increased from 250,835 in 1974 to 284,064 in 1975, a rise of 13 percent.

*The number of students scoring above 600 on the verbal part of the test fell from 98,766 in 1974 to 79,133 in 1975, a drop of 20 percent.

*The number of students scoring above 600 on the mathematical section fell from 169,844 in 1974 to 155,516 in 1975, a drop of 8 percent.

A comparison of scores (mean = 500) further confirms the tendency for more scores to fall in the lower ranges and fewer scores to fall in the upper ranges. Not only did those scoring below the mean increase by 6 percent on both the verbal and mathematical tests, but those scoring above the mean declined 9 percent and 4 percent respectively on the verbal and mathemathical tests.

Examination of the SAT data also reveals that the scores of women taking the test have fallen more than those of men. Between 1974 and 1975, the average score for men dropped from 447 to 437 on the verbal test. The women's average dropped from 442 to 431. On the mathematics test, the men's average dropped from 501 to 495. The women's average dropped from 459 to 449 (Table 3).

Further, the American College Testing Program, an Iowa-based agency that examined nearly 850,000 high school seniors last year, reports a similar pattern of decline. The ACT tests--in English, mathematics, social studies, and natural sciences--are used in place of the SAT in parts of the mid-west and the south. On a scale of 1 to 36, the

composite scores on all four tests have fallen from 19.9 in 1965 to 18.7 in 1974.[1]

TABLE 3

SAT SCORE AVERAGES, BY SEX, 1972-1975

	VERBAL			MATHEMATICAL		
Year	Male	Female	Total	Male	Female	Total
1972	454	452	453	505	461	484
1973	446	443	445	502	460	481
1974	447	442	444	501	459	480
1975	437	431	434	495	449	472
Decline	-17	-21	-19	-10	-12	-12

Source: Sam McCandless, "The SAT Score Decline," p. 7; Malcolm Scully, "Drop in Aptitude-Test Scores," p. 19.

EXPLANATIONS OF THE SCORE DECLINE

Clearly, the decline in SAT scores is an important and complex phenomenon; what is not so clear is how to explain the problem. Explanations of declining SAT scores generally fall into two broad categories: 1) those that focus on the students taking the test--their society, their family training, and their schooling; and 2) those that focus on the tests themselves--how they are constructed, evaluated, and interpreted. Since these two explanatory approaches to the score decline are seldom examined together, the conclusions they yield often result in confusing and contradictory policy proposals aimed at reversing the trend. What follows, therefore, is a critical examination and

assessment of each explanatory category and its implication for educational policy.

Student-Related Explanations

Explanations of declining SAT scores that focus on students are complex and elusive. For example, although changes in society, family, and schools undoubtedly affect student performance, it is difficult to assess the degree to which each factor contributes to declining SAT scores. Before examining these broad social and educational changes, however, we must first determine whether changes in the composition of the test-taking population are responsible for the decline.

The Pool of Test-Takers

In examining the nature of the SAT population, it is important to note that the approximately one million high school seniors who took the SAT last year represent only one-third of all high school seniors and only one-fourth of their 18-year-old age group. The chief of Program Services Division of the College Board, T. A. Cleary, stresses the importance of this often forgotten perspective: "What is true of the SAT population . . . is not necessarily true of all high school students and to generalize from the SAT-takers to the whole educational system is not justified."[2] We gain further perspective on the score decline in recognizing that we are looking at a decline in college-entrance test scores among a group of tested 18-year-olds who are about equal in number to the young people who do not even graduate from high school. The Program Services Officer of the College Board, Sam McCandless, has

written: "that one-quarter of all American young people do not graduate from high school is undoubtedly a social fact of by far the greater consequence, and we see no sustained progress here for nearly ten years."[3]

Although only twenty-five percent of the 18-year-old population takes the SAT, the question remains whether the composition of that population has changed. Some observers speculate that new program offerings in higher education have attracted students who lack traditional skills. Although these "new students" may successfully complete college programs in such non-traditional subject areas as police work, hotel management, and recreation, they perform poorly on the SAT and, therefore, depress the averages. Others contend that the mood of egalitarianism, stemming in part from the civil rights movements of the 1960's, has opened the doors of higher education to "educationally disadvantaged" minority students lacking in traditional skills. Both speculations may have some merit in explaining the increased number of scores on the lower end of the scale, but both fail to explain the concomitant reduction in scores in the upper ranges. Furthermore, the theory attributing the score decline to increased numbers of minority students taking the test is not supported by the evidence. According to the College Board, the proportion of minority students taking the SAT has remained constant (fourteen percent) during the period of greatest decline, from 1972 to 1975.[4]

An alternative theory about the changing composition of the test-taking population suggests a decline in the number of upper-class students taking the test. In an article entitled "The Blueing of America,"

Peter and Brigitte Berger indicate that growing numbers of upper and upper-middle class youth eschew professional careers to become candle makers, leather workers, and musicians. If their impressions are accurate, it would be logical to speculate that test scores would diminish in the upper ranges, since students from "advantaged" homes and good schools traditionally score well on the SAT. In examining the socio-economic status of the test-takers, however, McCandless found that recent declines resulted neither from decreases in the number of students from upper-income families nor from an increase in the number of students from low-income families.[5]

One change in the composition of the test-taking population has been confirmed: in recent years, more and more students use their junior-year SAT scores for admission to college, choosing to forego the opportunity of repeating the test as seniors. In 1964, eight percent of the high school graduates had taken the SAT only once, as juniors. By 1974, the figure had risen to twenty-nine percent. It continues to increase at the rate of about two percent a year.[6] This change in the composition of the test-taking population tends to depress the SAT averages. Individuals who rely on their junior-year-only scores are generally among the higher-scoring students in the total candidate group. The facts that (1) their senior-year scores no longer contribute to the averages, and that (2) the College Board estimates a fifteen point increase between junior and senior year scores, contribute to an average score decline. The magnitude of this decline, however, is trivial. Between 1973 and 1974, for example, there was a two percent increase in the number of junior-year-only scores--roughly 20,000

individuals. Adding the extra fifteen points to each score, however, would raise the SAT average of this group by only about one-third of a point. Although increasing numbers of junior-year-only scores will continue to artificially depress SAT averages, that depression must be considered minor.

With data presently available, therefore, it cannot be conclusively shown that changes in the composition of the test-taking population have caused the decline in SAT scores. On the other hand, it would be incorrect to rule out the possibility that such changes may contribute to the score decline. Suffice it to say that presently it is difficult to assess the degree to which each factor contributes to the decline. The problem of assessing these factors becomes increasingly evident as we examine changes in society.

Social Changes

Changes in social values and methods of communication are often held responsible for declining student performance on the SAT. One plausible explanation of the decline points to the rise of the "youth culture" in the past few decades. Popular book titles of the 1960's like The Technological Society, The Making of a Counter Culture, and The Greening of America characterize the growing, youthful disenchantment with the technological society.[7] According to these authors, the repudiation of achievement in traditional areas of status and privilege, the concern for social and humanistic goals, and the emphasis on personal and psychological development (rather than on "success" and national progress) combine to divert young people from traditional

training in academic subjects and, by implication, contribute to declining performance on the SAT.

Few social changes receive as much attention and publicity as the recent "communications revolution." The phenomenal growth of television has discouraged traditional verbal forms of reading and writing and, at least according to many, is largely responsible for declining student performance on the SAT. Instead of actively reading books to expose themselves to the basics of written communication, students spend increasingly more time in front of the television passively listening to the simplistic spoken style of the dialogue. In similar fashion, students today reportedly write fewer letters; the telephone is easily available. Indeed, some suggest that we have become a non-literary culture and have ceased to think with words (or to think at all). Holding non-traditional values and growing up in a society that communicates visually and emotionally, students today simply do not acquire the reading and writing skills examined by the SAT. Thus, they generate declining scores.

Family Changes

Closely related to changing social values and methods of communication are apparent changes in family structure and values. Some observers believe that the inability of students to perform well on the SAT is the result of increasing divorce rates and growing numbers of non-traditional family styles. According to this explanation, collapse of traditional family styles results in parental indifference to the proper education of youth and an overall mood of permissiveness. This

lack of parental discipline severely handicaps young people and contributes both to their poor performance in school and to their low achievement on the SAT.

School Changes

Of all the alternative explanations for declining SAT scores that focus on the student, changes in the schools command the most attention and are most often cited as being responsible for the decline. Many suggest that external factors are responsible for what is perceived as a deterioration of the quality of schooling in America. Some say that court-ordered busing creates an educational environment filled with racial tension and stress. Others claim that the courts make it virtually impossible to suspend or expel disruptive students, turning the classroom into a "nightmare" of discipline problems. Another external factor affecting the operation of schools is the tightening economic situation. School taxes are among the few voter-approved levies, and taxpayers increasingly register dissatisfaction with the economy by failing to approve school budgets and tax-overrides. With severely reduced expenditures for school operations, superintendents often reduce educational programs to the detriment of the students. Together, political and economic stress have diverted attention and resources away from the primary purpose of schooling, the basic education of youth.

Teachers also serve as convenient scapegoats for the apparent decline in the quality of schooling. Since the New York Teacher's Strike in 1968, when nearly 60,000 teachers walked out of New York City classrooms, teacher unionization and militancy have convinced some that,

rather than being concerned about the education of students, teachers are primarily interested in their own salaries, benefits, and working conditions. Popular minority opinion holds that teachers not only ignore their primary mission to seek personal gain, but are also less equipped to provide a good education than they were a decade or two earlier when there were no unions. A recent Newsweek article entitled, "Why Johnny Can't Write," addresses the problem of inadequate preparation of English teachers. According to the National Council of Teachers of English, it is possible for high school English teachers to go all through high school, college, and advanced-education degrees without taking a single course in English composition.[8]

On the other hand, many suggest that poor teaching performance is not the result of teacher militancy and inadequate training but rather the result of additional demands on the teacher's time. Teachers today are inundated with records and reports demanded by the ever-increasing school bureaucracy. Teachers must spend more and more time with discipline problems because of social permissiveness in general and the lack of parental discipline in particular. Finally, teachers are taken away from classroom activities because of the growing emphasis on guidance and counseling. These additional activities leave the teacher with little time to teach and therefore contribute to poor teaching and inadequate learning.

Other observers suggest that shifting trends in educational philosophy contribute to the perceived decline in the quality of schooling. "Modern" educational ideals stress individual creativity and many educators feel that insistence on formal grammar, structure, and punctuation

will only stifle spontaneity. Reduced attention to expository writing and the mechanics of composition not only contribute to declining SAT scores but point to the need for colleges and universities to offer remedial programs in basic verbal skills.[9] Another popular educational "philosophy" advocates that all schooling should relate directly to the student's future occupation. Although this type of vocational training, often called Career Education, is not designed to be narrowly technical, critics observe that such training often occurs at the expense of education in the traditionally important areas of reading, writing, and arithmetic. Those outwardly hostile to new educational programs argue that educators pay too much attention to the "fads" and "frills" and have ignored the "basics" of a good education that would produce high SAT scores.

Explanations of declining SAT scores in terms of the schools, be it their changing political and economic situation, their teachers, or their changing instructional emphases, result in severe indictments. For example, journalist James Kilpatrick states: "It occurs to me that the primary blame for this colossal failure [the decline of SAT scores] should be placed squarely upon the educational establishment. Our schools have been afflicted with teachers more interested in fads than in fundamentals."[10] College Board personnel disagree: "The SAT was never intended to be a measure of school achievement." As one official has noted:

> Skills and abilities measured by the SAT are developed slowly over a youngster's lifetime--both in and out of the school setting, [sic] and it is evident that many factors, including family and home life, exposure to the mass media, and other cultural and environmental factors are associated with students' performance.[11]

Similarly, the President of the College Entrance Examination Board, Sidney P. Marland Jr., responds: "To single out the schools as being responsible for the decline is unwarranted, unfair, and scientifically unfounded."[12]

Explanations of declining SAT scores in terms of students are difficult to assess. Whether and to what degree changes in the pool of test-takers, in society, in the family, and in the schools have affected student performance must await further research. It becomes apparent, nevertheless, that explaining SAT scores in terms of only student performance often results in a blanket condemnation of the most visible institution responsible for the training of youth--the schools. The SAT, however, was not designed to measure the effectiveness of schools and should not be used for that purpose. Quite obviously, there are some popular misconceptions about the tests themselves, especially about what the tests measure. It is necessary, therefore, to broaden our examination and understanding of the tests rather than simply to formulate unwise and premature proposals for changing the schools.

Test-Related Explanations

Explanations of declining SAT scores that focus on the construction, evaluation, and interpretation of the tests raise difficult and complex issues about tests in general and only indirectly respond to the recent SAT score decline. Nevertheless, questions about what the tests measure, the possibility of racial and class bias, and how the scores are used are essential to our understanding of the SAT and must

be addressed in some depth. Many of these claims about the SAT depend on historical evidence; therefore, it is necessary to begin our examination of the tests by reviewing the origins of the College Entrance Examination Board and the development of the SAT.[13]

The SAT in Historical Perspective

At the turn of the last century, colleges throughout the country lacked uniform admissions standards. In 1896, approximately 200 midwestern and western institutions relied on the process of accreditation. This system of admission, introduced by the University of Michigan in 1871, required faculty members of a given college to inspect the program of a secondary school: if the school were deemed adequate, all students with diplomas would gain automatic acceptance. Eastern colleges, on the other hand, regulated admission by employing a series of written examinations prepared and evaluated by their own faculty members. Both methods of admission were costly and time-consuming for the colleges; furthermore, as each institution had its own idiosyncratic requirements (Babylonian rather than Persian history, Latin preparation in Tacitus rather than in Virgil), it was difficult for secondary schools to prepare students for different colleges. This lack of articulation between college and secondary school curricula and standards was perceived as threatening at both levels. The College Entrance Examination Board (CEEB or "College Board") was formed in response to these problems.

Founded in 1900, the College Board sought to standardize college admission requirements on a national level. The process of accreditation

remained popular in the Mid-West, however, and the influence of the College Board was restricted essentially to the eastern states. On November 17, 1900, the College Board was formally approved by twelve eastern institutions: Barnard College, Bryn Mawr College, Columbia University, Cornell University, The Johns Hopkins University, New York University, Rutgers College, Swarthmore College, Union College, University of Pennsylvania, Vassar College, and the Woman's College of Baltimore (later Goucher). After choosing examination subjects and specifying what constituted standard preparation in them, the Board gave its first examination in 1901 to 973 students.

The experiment of a common examination board was not an instant success. Of the twelve original institutions, only three (Barnard, Columbia, and New York University) abandoned their own entrance examinations; the others, jealous of their prerogative to admit whomever they wished, used the College Board only in conjunction with their own examinations. By 1911, the Board had grown from twelve college members to twenty-nine, and the number of examinees had risen to 3,731. The Board's hope of rationalizing college admissions on a national scale remained largely unfulfilled, as membership continued to be primarily from established eastern colleges. Furthermore, the examinations continued to test content in certain subject areas rather than attempting to evaluate aptitude.

Following World War I the technology of testing underwent dramatic change. Prior to the war, French psychologist Alfred Binet (1857-1911) experimented with individual mental tests, positing that there was a native intellectual faculty that could be measured independently of

acquired learning. American psychologists, drawing on Binet's work, had developed intelligence tests that culminated in the 1916 Standard American revision known as the Stanford-Binet Test. A subsequent opportunity arose for an experiment in group mental testing when the American Psychological Association offered to develop standardized tests for the U. S. Army to classify recruits according to intellectual ability. In a period of about six weeks immediately prior to July 7, 1917, the Army Alpha and Beta tests (for literates and non-English speaking or illiterates, respectively) were constructed and subsequently administered to 1.7 million army recruits. Although there is little doubt that the tests well-served the Army's immediate need for a method of classification, important assumptions about intelligence, testing, and the social/occupational order remained unexamined. These unexamined assumptions had important consequences for the future of mental and aptitude testing.

During the construction of the Army tests there was little debate concerning the nature of intelligence. After the war, one of the original creators of the tests, H. H. Goddard, admitted: "We do not know what intelligence is and it is doubtful if we even know what knowledge is."[14] Despite this lack of a clear conception of what it was they were measuring, the testers used the scores to assign recruits to specific jobs in the Army hierarchy. The testers had found a high correlation between an officer's rating of a soldier and his test scores--"scientifically" confirming what appeared to be an occupational meritocracy in which the most intelligent individuals rose to the highest positions in the occupational hierarchy. However, as Joel Spring points

out, officer ratings were not based on the intelligence of a soldier but rather upon his "practical soldier value" or his ability to follow orders and to function within a rigidly disciplined and highly organized institutional structure.[15] Without offering a precise definition of intelligence, therefore, the testers believed they had "scientifically" validated a means to measure it.

In A Study of American Intelligence (1923), Carl Brigham examined Army test scores to see if there were any ethnic or racial differences in intelligence Not only did he find that blacks scored lower than whites, but that representatives of the Alpine and Mediterranean races were intellectually inferior to the representatives of the Nordic race. (His published findings, incidentally, gave strong support to individuals favoring restrictive immigration quotas primarily directed at southern and eastern Europeans.) If intelligence could be measured apart from acquired learning, the apparent conclusion was that blacks and southeastern Europeans were of inferior racial stock. As Horace Mann Bond and others have shown, however, if the army scores were grouped by states rather than nationally, northern Negroes scored higher than certain southern whites, and southern "Nordic" whites scored the lowest of all white soldiers (Table 4). Brigham's interpretation of the data could also be challenged on the ground that he failed to compare the army scores with years of schooling to see if a relationship existed. In 1930, Brigham disavowed his conclusions;[16] by this time, however, mental tests complete with their inherent assumptions had proliferated throughout the country. More importantly, they exerted a strong but often misunderstood influence on the testing program of the College Board.

TABLE 4

SCORE OF WHITE RECRUITS OF SOUTHERN STATES COMPARED WITH SCORE OF NEGRO RECRUITS OF NORTHERN STATES IN THE ARMY ALPHA TEST

Southern States	Median Scores of White Recruits	Northern States	Median Scores of Negro Recruits
Mississippi	41.25	Ohio	49.50
Kentucky	41.50	Pennsylvania	42.00
Arkansas	41.55	New York	45.02
Georgia	42.12	Illinois	47.35

Source: Horace Mann Bond, The Education of the Negro, p. 318.

Following World War I many colleges employed mental tests as a part of their admissions procedure. By 1922 some twenty-nine colleges used the Army Alpha test itself to determine a student's aptitude for college work. Although there was still no exact knowledge of what the tests were measuring, correlations between test scores and college performance were higher than other entrance examinations. In 1920 the College Entrance Examination Board recognized the growing popularity of mental tests and appointed a committee to design such a test. In 1926 a new test specifically designed for college admissions was administered to 8,000 prospective college students. Its name: the Scholastic Aptitude Test (SAT). Its primary developer: Carl Brigham.

During the 1930's the SAT served as an alternative to the traditional essay examinations administered by the College Board. By this time, the SAT had been divided into separate mathematical and verbal tests; however, it was not until 1937 that the popularity of the SAT increased. In that year the scholarship committees of Harvard,

Princeton, and Yale commissioned the College Board to construct a set of one-hour achievement tests to be given in conjunction with the SAT to provide a basis for selecting recipients of scholarships. This combined test, given in April before the school year ended, became (in 1941) the only requirement for admission to these three institutions. Because of their high predictive value, the ease of administration and scoring, and the sponsorship of the prestigious eastern colleges, the SAT enjoyed growing popularity. In 1942 the College Board abolished its essay examination in favor of the SAT.

Membership on the College Board grew slowly. Between 1925 and 1940 member colleges rose from 35 to 44, but the number of high school seniors examined by the Board decreased from 19,775 to 17,377. More importantly, the Board continued primarily to serve the old, well-established eastern colleges. Initially, membership on the College Board was without restrictions; however, by 1940, the year the University of Chicago became a member, Western Reserve was the only member institution from the Mid-West. Apparently, changing requirements for membership served to limit the appeal of the College Board. For example, in 1906 open membership was replaced by a requirement that prospective member colleges have high academic standards and an endowment yielding at least $20,000 a year. In 1916 the endowment requirement for membership was raised to $50,000 a year. It was not until 1942 that the endowment requirement was abolished, and in that year any college approved by the Association of American Universities was granted admission.

The importance of the College Board's elite eastern membership becomes clear as we examine the students who took the test. In 1926, for example, over 75 percent of the students taking the SAT applied to Harvard, Yale, Princeton, Pennsylvania, Smith, Wellesley, and Vassar--all elite, private, eastern institutions. Likewise, by 1940, although 94 percent of all high school students attended public schools, 54 percent of the students taking the SAT came from private schools. More importantly, those students taking the SAT in 1941 served as the base group for the establishment of the mean score of 500 and the standard deviation of 100 that are still employed today. Few people then questioned the restricted sample population used to norm or standardize the SAT.

Just as World War I played a significant role in the original development of the SAT, World War II contributed to its widespread acceptance. Following the war, college applications soared. While thousands of returning veterans contributed to this increase, it was the emergence of collegiate training as a prerequisite for white-collar and professional jobs that made the growth phenomenal. Often inundated with applications, more and more colleges affiliated with the College Board and employed the SAT to streamline and standardize their admission procedures. The meteoric rise in Board membership and in the number of students examined after the war suggests that for youth aged 18 to 21 college attendance was fast becoming the accepted "rite of passage" into the adult world (Table 5).

TABLE 5

COLLEGE MEMBERSHIP ON THE COLLEGE BOARD AND NUMBER OF HIGH SCHOOL STUDENTS EXAMINED; COLLEGE UNDERGRADUATES BY NUMBER AND AS PERCENTAGE OF POPULATION AGED 18 TO 21

Year	Member Colleges	# of High School Seniors Examined	# of Undergraduate Students	% of Pop. 18-21
1930	40	11,470	1,053,000	11.9
1940	44	17,377	1,388,000	14.5
1950	114	63,352	2,422,000	26.9
1960	428	400,000	3,277,000	33.8
1970	850	1,000,000	6,840,000	47.6

Source: Michael Schudson, "Organizing the 'Meritocracy,'" pp. 58, 60.

On the recommendation of the Carnegie Foundation for the Advancement of Teaching and the American Council on Education, the Educational Testing Service was established in 1947 to consolidate and administer various testing activities around the nation--including the College Entrance Examination Board's Scholastic Aptitude Test. With an initial grant from the Carnegie Corporation, ETS began its operations in 1948 by giving the SAT to 75,000 high school students. Today ETS has grown into a multi-million-dollar testing and research corporation which, in 1975, administered a wide variety of aptitude and achievement tests to approximately 2.5 million Americans. Of that number, 1.8 million were high school students taking the SAT.

Criticisms of the SAT

Examination of the seventy-six-year history of the College Entrance Examination Board and the fifty-year history of the Scholastic Aptitude

Test not only broadens our understanding of the SAT but raises some complex and fundamental questions about testing. The questions, however, are not new. Many of the current criticisms of the SAT echo earlier challenges to testing made by Walter Lippmann and William Bagley in the 1920's, Allison Davis in the 1940's, and Banesh Hoffmann in the 1960's.[17] On the other hand, the failure of present-day critics to distinguish between mental tests in general and aptitude tests in particular has resulted in inaccurate historical comparisons that tend to obfuscate central issues. For this reason, it is important to examine the tests themselves and address three of the major criticisms, namely: that the SAT does not measure "true aptitude," that the test is racially and class biased, and that SAT scores are misused by college admissions personnel.

Not a measure of aptitude. One of the fundamental and most serious confusions about the SAT arises over the meaning of the word "aptitude." Many critics of the SAT use the word "aptitude" interchangeably with terms such as "intelligence" and "capacity" and imply that "aptitude" is fixed and even inheritable. By failing to arrive at a precise definition of aptitude, critics claim the SAT does not look for aptitude but rather for values and acquired skills consistent with middle- and upper-class America.[18] Likewise, critics question the fixed quality of aptitude by citing tutors and coaching schools that claim to raise SAT scores by as much as 100 points. To quote Steven Brill, "practice and self-confidence can make a significant difference on what is supposed to be an 'aptitude' test."[19]

"Aptitude," however, is not synonymous with intelligence or capacity, nor is it completely fixed or inherited. Aptitude refers to developed abilities to perform certain tasks. In the case of the SAT, aptitude specifically refers to those abilities that are most commonly needed for academic performance in colleges and universities. According to the president of the College Board, "The SAT is not a measure of some innate and unchanging quality that somehow mystically categorizes people. . . . It is a measure of developed verbal and mathematical reasoning and abilities."[20] These abilities are developed throughout a student's lifetime and are influenced by an individual's society, cultural background, and environment. SAT scores, however, do not purport to measure all information about individual aptitude, for human reactions to the test and the testing situation are unpredictable. Again, according to the College Board's president, the SAT "supplements the school record and other information about the student in assessing competence to do college work."[21]

If aptitude is defined in terms of developed abilities, then it comes as no surprise that aptitude can be improved. Critics, however, continue to be vague about their terminology and, in turn, make inaccurate historical comparisons--in this case, between I.Q. tests and the SAT. In the 1920's, for example, Walter Lippmann and William Bagley challenged the beliefs of early testing pioneers such as Stanford's Lewis Terman that intelligence was hereditary and that intelligence tests measured innate abilities. Because the developers and proponents of I.Q. tests were often closely associated with the evolution of the SAT, it becomes inviting to employ the arguments of earlier critics of

I.Q. testing to criticize the SAT. As we have seen, individuals such as Carl Brigham made certain incautious pronouncements about the nature of intelligence and its distribution among various ethnic and racial groups; likewise, he participated in the initial development of the SAT. The past, quite obviously, is not free of blemishes. Yet to criticize the SAT--a test of scholastic aptitude--in terms of Brigham's earlier statements on the nature and distribution of intelligence (statements that were indeed premature and socially damaging to certain groups) is unsupportable.

Racial and class bias. The claim of racial and class bias may be stated quite simply: non-white and poor students have much lower median SAT scores than do white students from high-income families. The correlation between a student's economic and racial background and his test score is direct and continuous. Aware of the growing criticism of the SAT, the College Board appointed a Commission on Tests in 1967 to assess the claims of bias. The Commission's report, released in 1970, confirmed the correlations:

> Certainly it is particularly unfortunate that the characteristics that make for success in school work as it is commonly conducted are, if not specific to some segments of society, at least disproportionately distributed among its social classes and its racial and ethnic groups.[22]

The evidence that poor and minority people do not perform as well as middle-income and wealthy whites has led some critics to conclude that the SAT systematically and intentionally discriminates against these groups. At best, such leaps from evidence to conclusion are questionable. Critics substantiate their claims by citing historical evidence concerning mental tests. Again, Brigham's racist pronouncements

concerning the nature and distribution of intelligence are employed as examples of intentional racial bias on the SAT. Likewise, critics refer to the elite eastern membership on the original College Board to substantiate their claims that the SAT has discriminated and continues to discriminate against the lower classes. What critics tend to ignore, however, is that the SAT has been used for identifying qualified and talented minority students who otherwise would have been excluded from attending college on purely racial or social grounds.

To suggest the shortcomings on the critics' use of historical comparisons should not be interpreted to mean that issues of racial and class bias are not important. Rather, it is my conviction that the focus of the criticisms is misdirected. Although tests have racial and social consequences, it does not necessarily follow that the tests themselves are biased. Just as most critics today see no good in tests, testers around the turn of the century saw no evil in them. The faults of the early testers were their convictions as to the accuracy of their measurement and their incautious interpretations of the data, not, as critics claim, their intentional racial and social prejudice.

Believing that the methods of science were impartial, the early testers did not study the consequences of testing for the social or occupational order. Indeed, as Paul Chapman points out, "The cloak of science frequently blinded testers to the social implications of their work."[23] A nationally known expert on mental-testing, Lee J. Cronbach, suggests why:

> The social scientist is trained to think that he does not know all the answers. The social scientist is not trained to realize that he does not know all the questions. And that is why his social influence is not unfailingly constructive. [emphasis added][24]

To simply do away with tests because they have racial and social consequences is unwise. "Sound policy," Cronbach cautions, "is not for tests or against tests; what matters is how tests are used."[25]

Misuse of test scores. The most compelling criticism of the SAT concerns the misuse of test scores. Similar to the basic confusion about the term "aptitude," illusory significance is imputed to the test scores and the meaning of differences between two individual scores. The SAT scores which range from 200 to 800 points are not precise measurements but rather probabilities of success for performing college work. A score of 600 on the SAT,

> only means that there is a two-in-three chance that your "true" score--the score you'd receive if all external factors, like luck in guessing, could be eliminated--would fall somewhere between 570 and 630. There is also a one-in-three chance that your true score will fall somewhere below 570 or above 630.[26]

Likewise, differences between two students' scores of 72 points on the math section and 66 points on the verbal section are statistically insignificant (i.e., the differences could occur by chance alone).

Critics claim, I believe correctly, that students, parents, teachers, and even college admissions personnel often misinterpret and misuse SAT scores. For students, SAT scores provide an important, but often misunderstood, criterion for self-worth. High school teachers and counselors, often uninformed as to what the SAT measures, employ test scores to advise students whether or not to purse higher education and where to apply. Most importantly, college admissions personnel use SAT scores to determine the acceptability of an applicant--often without a clear understanding of what the SAT scores mean. In spite of the

facts noted above that a 72-point difference on the math section or a 66-point difference on the verbal section is statistically insignificant, Brill found admissions officers at Yale, Berkeley, New York University, Georgetown, Boston University, and Wesleyan who said that such differences would definitely be major factors in determining which of two otherwise equally acceptable applicants should be granted admission.[27] Furthermore, some institutions of higher education prescribe specific cut-off scores for admission.

It is likely that misuse of SAT scores will continue, especially in understaffed and overworked college admissions offices. The number of college applicants makes SAT scores virtually indispensable to admissions personnel confronted with thousands of applicarts. Adding to the difficulty of the student selection process has been the recent trend toward de-emphasizing specific letter grades. Faced with more general evaluations such as "pass" and "no-pass" on the one hand and a significant rise in the number of "A's" and "B's" (euphemistically called "grade inflation") on the other, college admissions officers increasingly receive similar applications from high school seniors.[28] To distinguish among applicants, therefore, admissions officers tend to place more and more emphasis on SAT scores.

Not all institutions of higher education employ the SAT nor is the same reliance invariably placed on SAT scores among institutions that require the test for admission. Almost as many high school students take the American College Testing Program's examination (ACT) as take the College Board. The ACT measures the same skills as the SAT, and is frequently used in its place by state college systems in the Mid-West

and in parts of the South. One institution, Bowdoin College in Maine, abolished the SAT requirement for applicants in 1970. After finding little correlation between the SAT scores of entering freshmen and the grades of students who graduated four years later with high honors, former Bowdoin College admissions director Richard Moll announced the elimination of the College Board requirement. (It should be mentioned that the predictive validity of the SAT does not extend beyond freshmen-year grades. Thus the findings of Bowdoin College do not threaten the SAT's validity.)

Some state institutions have restricted the ways in which SAT scores may be used in the student selection process. For example, although the Oregon State Board of Higher Education requires applicants to take the SAT, Oregon high school graduates with a 2.5 grade point average (2.75 GPA for out-of-state applicants) are admitted regardless of their SAT scores. According to University of Oregon Admissions Director Vernon Barkhurst, SAT scores are used to place freshmen in appropriate college-level courses such as composition and math; however, only when a student's grade point average falls below the minimum entry level are SAT scores considered in the applicant-review process.

As stated earlier, questions about what the SAT measures, the possibility of racial and class bias, and the way scores are used are critical to our understanding of the SAT but only indirectly address the issue of the recent SAT score decline. It has been suggested that faulty historical comparisons between I.Q. tests and the SAT have led to some basic confusions about what the SAT measures and whether or not it is biased. Misuse of test scores, however, remains the most serious

problem. For that reason, we must continue to broaden our understanding of the score decline.

WHY SAT SCORES ARE FALLING

"At this time," the president of the College Board states, "we have no substantial evidence that enables us to attribute the score decline to any single cause or any particular set of causes." Nevertheless, he continues, "we take very seriously our responsibility to try to explain the phenomenon as dependable evidence is assembled."[29] Although the College Board is convinced that the score decline is "real" (i.e., there is a drop in scholastic aptitude among individuals taking the SAT), they stress that "there is nothing basically wrong with the way the test is constructed, administered, evaluated, and scored."[30]

Educational and social changes probably affect student performance on the SAT; however, it is difficult to assess the degree to which each factor contributes to the score decline. In October, 1975, the College Board appointed a special advisory panel to assess the various explanations of the decline, to suggest other hypotheses, and to recommend additional areas of inquiry. Headed by Willard Wirtz, president of the National Manpower Institute, the panel is composed of sixteen members, including nationally known experts in education, measurement, sociology, and communications. The College Board is convinced that the problem is serious and deserved the informed attention of teachers, parents, college admissions personnel, and the public-at-large. Neither hastily constructed explanations by editorial writers and the public nor

blanket condemnation of tests by critics contributes much to our understanding.

NOTES

1. Malcolm Scully, "Drop in Aptitude-Test Scores," p. 1.
2. College Entrance Examination Board, "SAT Scores Down," p. 1.
3. Sam McCandless, "The SAT Score Decline," p. 14.
4. Malcolm Scully, "Drop in Aptitude-Test Scores," p. 2.
5. Sam McCandless, "The SAT Score Decline," p. 25.
6. Sam McCandless, "The SAT Score Decline," p. 5.
7. Jacques Ellul, The Technological Society; Theodore Roszak, The Making of a Counter Culture; Charles Reich, The Greening of America.
8. Merrill Sheils, "Why Johnny Can't Write," p. 61.
9. Lucia Mouat, "Why Must Colleges," p. 1.
10. James Kilpatrick, "Have Schools SAT on Their Hands?" p. 15.
11. College Entrance Examination Board, "SAT Scores Down," p. 1.
12. Sidney Marland Jr., "Commentary on the SAT Score Decline," p. 6.
13. For the history of the College Board, I have relied heavily on the analysis of Michael Schudson, "Organizing the 'Meritocracy.'"
14. Quoted in Joel Spring, "Psychologists and the War," p. 5.
15. Joel Spring, "Psychologists and the War," pp. 8-9.
16. Carl Brigham, "Intelligence Tests of Immigrant Groups."
17. Walter Lippmann, "A Defense of Education," (see also issues of The New Republic from October 1922 through May 1923); William Bagley, Determinism in Education; Allison Davis, "Poor People Have Brains, Too"; Banesh Hoffmann, The Tyranny of Testing.
18. Steven Brill, "The Secrecy Behind the College Boards," p. 70.
19. Steven Brill, "The Secrecy Behind the College Boards," pp. 68-70.
20. Sidney Marland Jr., "Commentary on the SAT Score Decline," p. 6.

21. Sidney Marland Jr., "Commentary on the SAT Score Decline," p. 6.

22. Commission on Tests, Righting the Balance, p. 50.

23. Paul Chapman, "The Intelligence Testing Movement," p. 18.

24. Lee Cronbach, "Five Decades of Public Controversy," p. 13.

25. Lee Cronbach, "Five Decades of Public Controversy," p. 1.

26. Steven Brill, "The Secrecy Behind the College Boards," p. 68.

27. Steven Brill, "The Secrecy Behind the College Boards," p. 72.

28. Malcolm Scully, "Crackdown on 'Grade Inflation.'"

29. Sidney Marland Jr., "Commentary on the SAT Score Decline," p. 6.

30. Sidney Marland Jr., "Commentary on the SAT Score Decline," p. 6.

BIBLIOGRAPHY

Bagley, William C. Determinism in Education. Baltimore: Warwick and York, 1925.

Berger, Peter L. and Brigitte. "The Blueing of America." The New Republic, April 3, 1971, pp. 20-23.

Bond, Horace Mann. The Education of the Negro in the American Social Order. New York: Octagon Books, 1970 [1934].

Brigham, Carl C. A Study of American Intelligence. Princeton, N.J.: Princeton University Press, 1923.

Brigham, Carl C. "Intelligence Tests of Immigrant Groups." Psychological Review, XXXVII (1930), pp. 158-165.

Brill, Steven. "The Secrecy Behind the College Boards." New York Magazine, VII (October 7, 1974), pp. 67-83.

Chapman, Paul D. "The Intelligence Testing Movement: Reorganizing Schools for the Meritocracy." Unpublished seminar paper, Stanford University, 1973.

College Entrance Examination Board. "Advisory Panel to Assess Causes of Decline in SAT Scores." The College Board News, January, 1976, pp. 1, 5.

College Entrance Examination Board. "SAT Scores Down; Study of Causes Continues." The College Board News, March, 1974, pp. 1, 4.

Commission on Tests. Righting the Balance. New York: College Entrance Examination Board, 1970.

Cronbach, Lee J. "Five Decades of Public Controversy over Mental Testing." American Psychologist, XXX (January, 1975), pp. 1-14.

Davis, Allison. "Poor People Have Brains, Too." Phi Delta Kappan, XXX (1949), pp. 294-295.

Ellul, Jacques. The Technological Society. New York: Alfred A. Knopf, 1964.

Hoffmann, Banesh. The Tyranny of Testing. New York: Crowell-Collier, 1962.

Karier, Clarence J. "Testing for Order and Control in the Corporate Liberal State." In Clarence Karier, ed., Roots of Crisis: American Education in the Twentieth Century. Chicago: Rand McNally College Publishing Company, 1973, pp. 108-137.

Kilpatrick, James J. "Have Schools SAT on Their Hands?" Edu-Gram, VIII (December, 1975), p. 15.

Lippmann, Walter. "A Defense of Education." Century Illustrated Magazine, CVI (1923), pp. 95-103.

Marland, Sidney P. Jr. "Commentary on the SAT Score Decline." The College Board News, January, 1976, p. 6.

McCandless, Sam A. "The SAT Score Decline and Its Implications for College Admissions." Unpublished paper presented at the 1975 Western Regional Meeting of the College Entrance Examination Board.

Mouat, Lucia. "Why Must Colleges Today Spend So Much Time Teaching the Basics?" Christian Science Monitor, September 24, 1975, pp. 1, 9.

Reich, Charles A. The Greening of America. New York: Random House, 1970.

Robinson, Don. "Why Are SAT Scores Falling?" Eugene Register Guard, November 23, 1975.

Roszak, Theodore. The Making of a Counter Culture. Garden City, N.Y.: Anchor Books, 1969.

Schudson, Michael S. "Organizing the 'Meritocracy': A History of the College Entrance Examination Board." Harvard Educational Review, XLII (February, 1972), pp. 34-69.

Scully, Malcolm G. "Crackdown on 'Grade Inflation.'" Chronicle of Higher Education, December 22, 1975, pp. 1, 12.

Scully, Malcolm G. "Drop in Aptitude-Test Scores is Largest on Record." Chronicle of Higher Education, September 15, 1975, pp. 1, 19.

Sheils, Merrill. "Why Johnny Can't Write." Newsweek, December 8, 1975, pp. 58-65.

Spring, Joel H. "Psychologists and the War: The Meaning of Intelligence in the Alpha and Beta Tests." History of Education Quarterly, XII (Spring, 1972), pp. 3-15.